L 32832-66

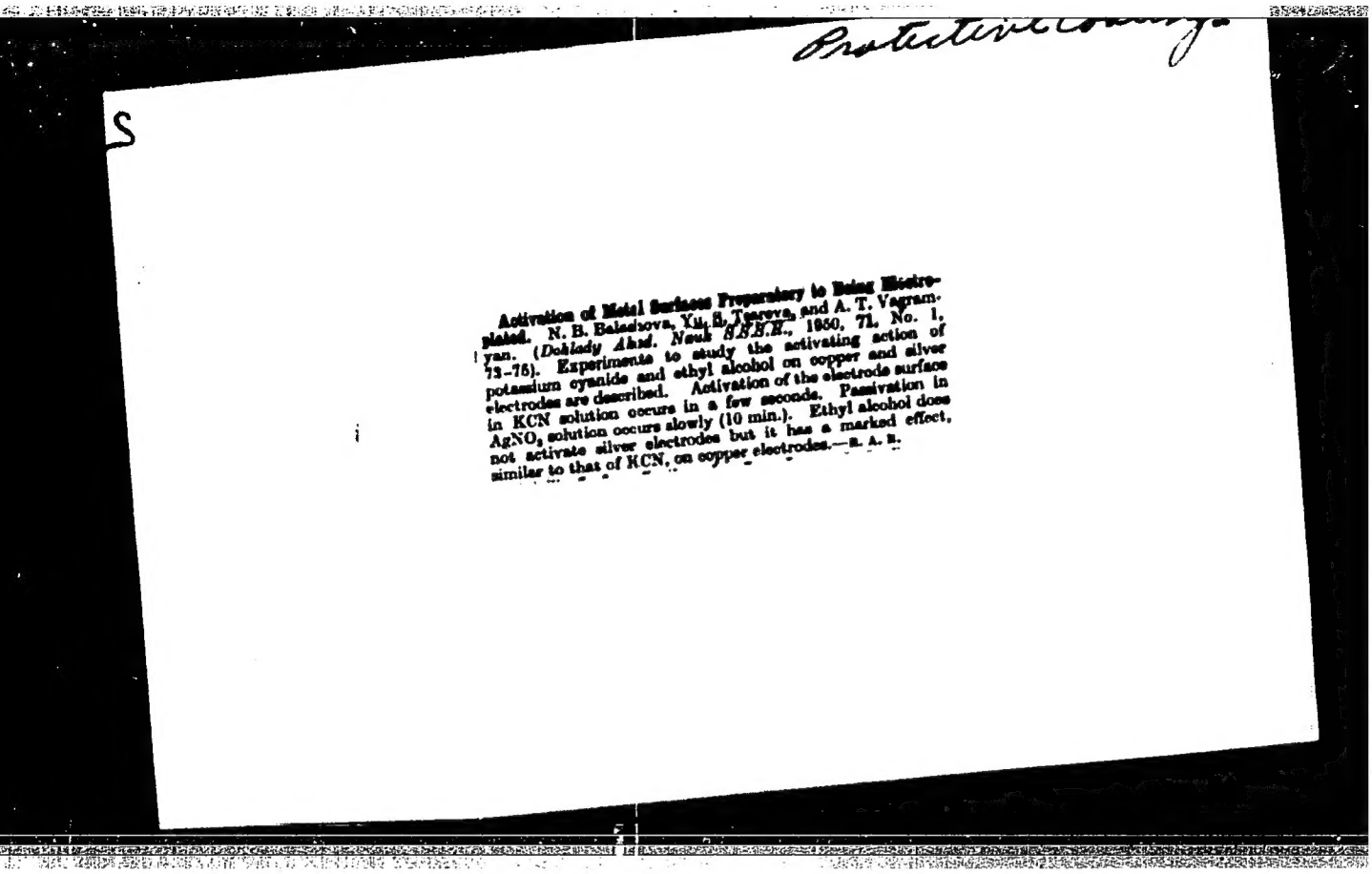
ACC NR: AT6008556

0

results of the study show that the distance between two averaged standards for the majority of symbols is much greater than the sum dispersion of the symbols. The quality of recognition decreases with field overlapping of the symbols. Dispersion of straight symbols such as H or T is 1.5 to 2 times lower than for round letters. The fragment methods are discussed. The fragment method used can be improved by the addition of several thresholds, up to 5, and several gradations in weight, up to 10. This will result in increasing the reliability of recognition. Orig. art. has: 7 figures, 2 tables, and 6 formulas.

SUB CODE: 09, 12 / SUBM DATE: 09Sep65 / ORIG REF: 005 / OTH REF: 005

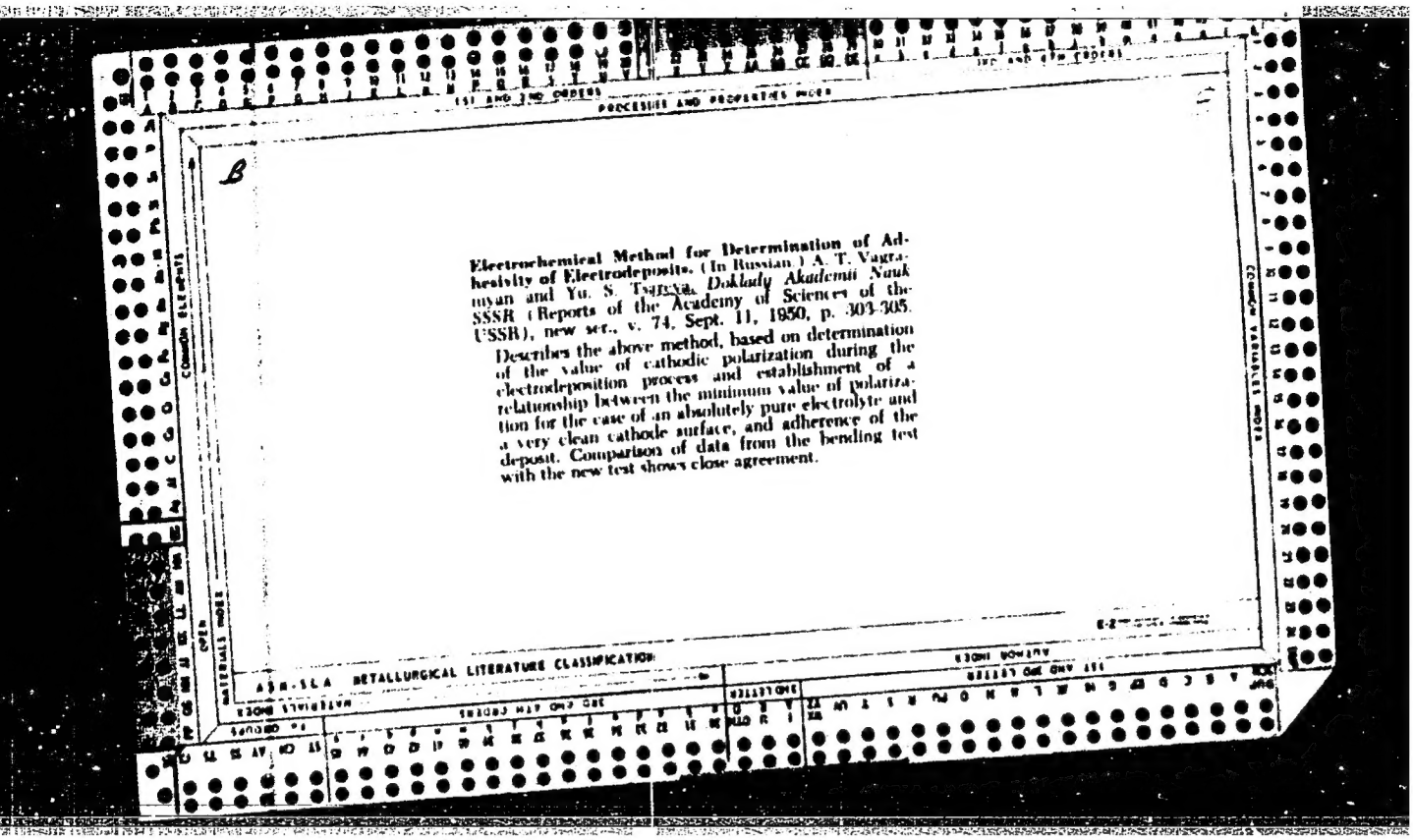
Card 2/2



Protective coating

S

Activation of Metal Surfaces Preparatory to Being Electroplated. N. B. Balashova, Yu. B. Tsareva, and A. T. Vagramyan. (*Doklady Akad. Nauk S.S.S.R.*, 1950, 71, No. 1, 73–76). Experiments to study the activating action of potassium cyanide and ethyl alcohol on copper and silver electrodes are described. Activation of the electrode surface in KCN solution occurs in a few seconds. Passivation in $AgNO_3$ solution occurs slowly (10 min.). Ethyl alcohol does not activate silver electrodes but it has a marked effect, similar to that of KCN, on copper electrodes.—R. A. R.



Electrochemical Method for Determination of Adhesivity of Electrodeposits. (In Russian.) A. T. Vagramyan and Yu. S. Tsarevskii. *Doklady Akademii Nauk* SSSR (Reports of the Academy of Sciences of the USSR), new ser., v. 74, Sept. 11, 1950, p. 303-305.

Describes the above method, based on determination of the value of cathodic polarization during the electrodeposition process and establishment of a relationship between the minimum value of polarization for the case of an absolutely pure electrolyte and a very clean cathode surface, and adherence of the deposit. Comparison of data from the bending test with the new test shows close agreement.

Tsareva, Yu. S.

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 29/47

Authors : Vagramyan, A. T., and Tsareva, Yu. S.

Title : Internal stresses of electrolytic nickel depositions and their porosity

Periodical : Dok. AN SSSR 98/5, 807-809, Oct 11, 1954

Abstract : The effect of surface-active substances and alternating current on the internal stresses and porosity of electrolytic coatings was investigated. The effect of 2,6 - 2,7-naphthalindisulfonic acid and paracresol, on the porosity of an electrolytic Ni-deposition, is explained. The extent to which the value of internal stresses is affected by the addition of the above mentioned substances is discussed. The parallelism between the effect of surface-active substances and variable current on the internal stresses indicates that the porosity of electrolytic depositions is due mostly to the stresses in these depositions. Two USSR references (1951 and 1952). Graphs.

Institution : ...

Presented by : Academician A. N. Frumkin, May 21, 1954

USSR/Chemistry - Electrolysis

Card 1/2 Pub. 147 - 20/26

Authors : Tsareva, Yu. S.; Solokhina, V. G.; Kudryvtsev, N. T.; and Vagramyan, A. T.

Title : Effect of surface active substances on the mechanical properties of electrolytic Cu-depositions

Periodical : Zhur. fiz. khim. 29/1, 166-173, Jan 1955

Abstract : It was established experimentally that surface active substances added some times to an acid copper sulfate solution for copper plating produce different effects on the mechanical properties of the deposit. It was found that surface active substances can cause internal contraction and expansion stresses depending upon the nature and concentration of the substance and the current density.

Institution : Academy of Sciences USSR, Institute of Physical Chemistry, Moscow

Submitted : June 9. 1954

Periodical : Zhur. fiz. khim. 29/1, 116-173, Jan 1955

Card 2/2 Pub. 147 - 20/26

Abstract : It was established that copper deposits obtained from electrolytes containing thiourea and naphthalindisulfonic acid possess sufficient plasticity, high micro-hardness and small internal stresses. An instrument is described which records automatically any changes in internal stresses of electrolytic deposit in electrolysis processes. Nine USSR references (1935-1951). Table; graphs; drawing.

TSAREVA, Yu.S.

USSR/Chemistry - Electrolysis

Card 1/2 Pub. 147 - 22/26

Authors : Vagramyan, A. T., and Tsareva, Yu. S.

Title : Internal stresses of electrolytic metal deposit

Periodical : Zhur. fiz khim. 29/1, 185-193, Jan 1955

Abstract : The basic factors resulting in internal stresses in electrolytic metal deposit were found to be: changes in lattice parameters, changes in the distances between the deposition crystals, amalgamation or enlargement of deposition crystals and the formation of chemical compounds between the metal and the admixtures included in it. A thorough study of the internal stresses of electrolytic metal depositions showed a parallelism between the internal stresses originating in the deposition and overstrain.

Institution : Academy of Sciences USSR, Institute of Physical Chemistry, Moscow

Submitted : June 9, 1954

Periodical : Zhur. fiz. khim. 29/1, 185-193, Jan 1955

Card 2/2 Pub. 147 - 22/26

Abstract : The electrolysis conditions and the composition of the electrolyte were found to have a definite effect on the internal stresses. Eleven references: 6 USSR; 3 German and 2 USA (1922-1954). Tables; graphs.

KANTOROV, I. Sh., TSARIVA, E. F.

Clothing Trade

Multiple style process on a non-mechanized conveyer. Leg. prom. 12 no. 4: 7-9 Ap 1952.

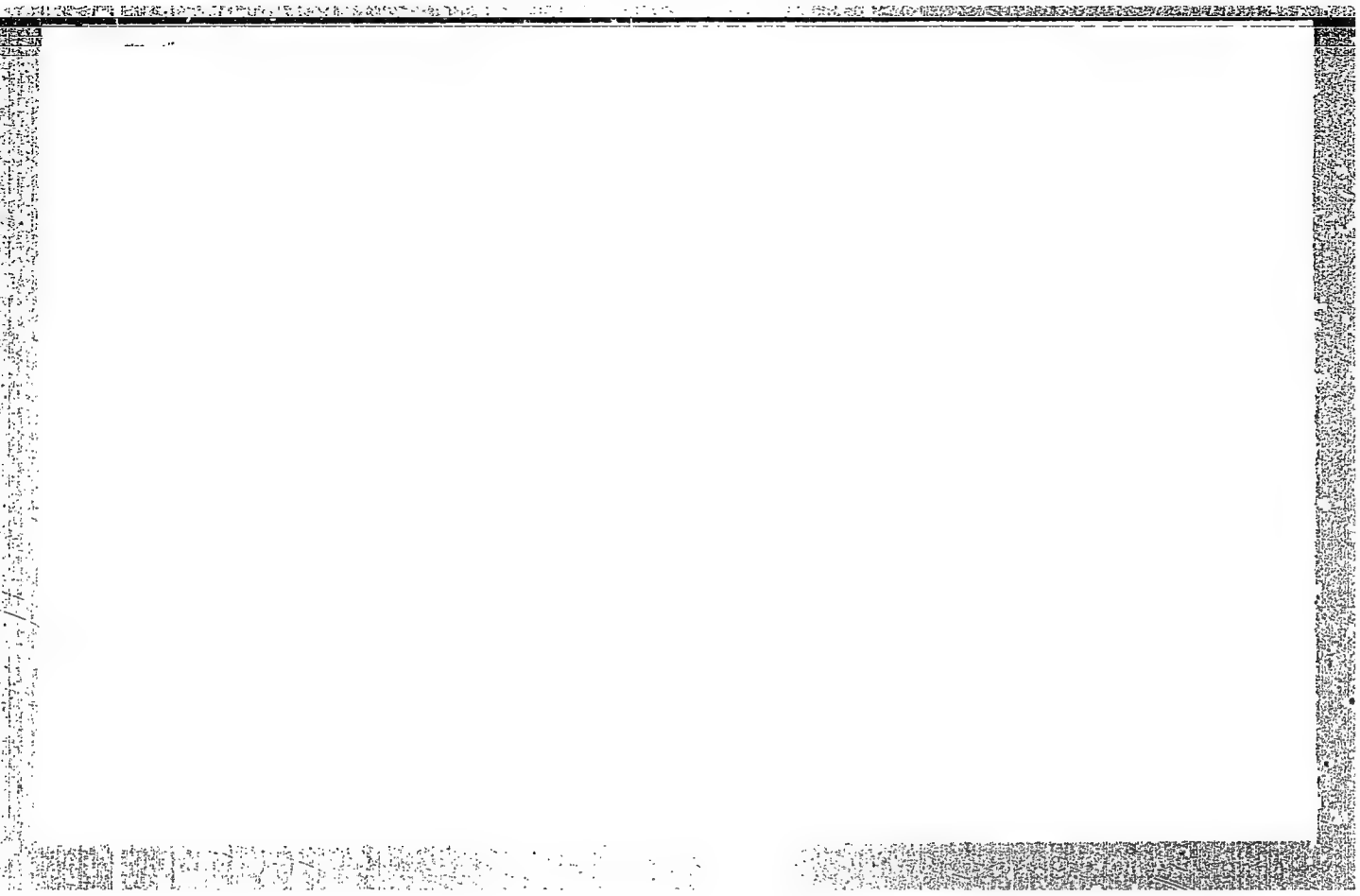
9. Monthly List of Russian Accessions, Library of Congress, July 1953. Unclassified.

TSAREVA, Z. Ya.

GAPONENKO, M.F.; TSAREVA, Z.Ya.

Subcutaneous rupture of the retroperitoneal duodenum caused by injury. Khirurgiia 33 no.4:145-146 Ap '57. (MLRA 10:7)

1. Iz khirurgicheskogo otdeleniya (zav. M.F.Gaponenko) Shchelkovskoy bol'nitsy.
(DUODENUM--WOUNDS AND INJURIES)



15-57-7-10356

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7, p 252 (USSR)

AUTHORS: Tsarevich, K. A., Kuranov, I. F.

TITLE: Computing the Production of Central Drill Hole in a Circular Distribution Worked by Buoyant Method (Raschet debitov tsentral'noy skvazhiny v krugovom plaste pri uprugom rezhime)

PERIODICAL: Tr. Vses. neftegaz. n.-i. in-t, 1956, Nr 8, pp 9-34

ABSTRACT: Bibliographic entry

Card 1/1

TSAREVICH, K.A.; KURANOV, I.F.

Computing the flow of the central well of a round-shaped oil pool in the case of elastic drive. Trudy VNII no.8:9-34 '56.
(MLRA 9:12)

(Fluid dynamics) (Petroleum engineering)

TSAREVICH, K.A.

DECEASED

Fuels

See ILC

TSAREVSKA, N., inzh.

Effectiveness of capital investments in coal mining. Min delo 17 no.11:42-44 '62.

1. Mimno-geolozhki institut.

TSAREVSKA, N.P.

Certain problems in the methods of determining economic effect of capital investments in coal mining. Godishnik Min geol inst 7:503-510 '60/'61 [publ. '62].

SITNITS'KA, I.G. [Sytnyts'ka, I.H.], kand.med.nauk.;TSAREVSKA, P.M.

Clinical picture of celiac disease. Ped., akush. i gin. 25 no.1:22-23 '63. (MIRA 16:5)

1. Druga likarnya Moskovs'kogo rayonu m. Kiyeva(golovniy likar A.O.Rudik [A.O.Rudyk]).
(CELIAC DISEASE)

KRASIL'SHCHIKOV, L.B.; TSAREVSKAYA, A.A.

Apparatus for measuring reflection indicatrices in the 0.6-3.5 μ region of the spectrum. Trudy GGO no.100:131-132 '60.
(MIRA 13:6)
(Reflection (Optics))

L 00837-67 EWT(m)/EWP(j) RM

ACC NR: AP6027779 (A) SOURCE CODE: UR/0190/66/008/008/1455/1458

AUTHOR: Kargin, V. A.; Tsarevskaya, I. Yu. 30 B

ORG: Institute of Petrochemical Synthesis, AN SSSR (Institut neftekhimicheskogo sinteza AN SSSR)

TITLE: Deformation of crystalline polybutylene 1

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 8, 1966, 1455-1458

TOPIC TAGS: spherulite, polybutylene, crystalline polybutylene, material deformation, elastic deformation, structure degradation

ABSTRACT: Deformation of crystalline polybutylene was studied. It was shown that polybutylene obtains high reversible deformations in the limits of the state. Crystalline formations (spherulites) behave as a homogeneous substance the deformation of which corresponds to the deformation of the whole sample. Thus, the elastic deformation without a structure degradation could reach some 10%. Orig. art. has: 7 figures. [Based on authors' abstract] [NT]

SUB CODE: 07/ SUBM DATE: 10Jul65/ ORIG REF: 005/

Card 1/1 hs UDC: 678.01:53+678.742

ACCESSION NR: AT4020711 S/0000/63/000/000/0219/0223

AUTHOR: Kargin, V. A.; Tsarevskaya, I. Yu.

TITLE: Mechanical properties of polybutylene

SOURCE: Karbotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Carbon-chain macromolecular compounds); sbornik statey. Moscow, Izd-vo AN SSSR, 1963, 219-223

TOPIC TAGS: polybutylene, optical property, x-ray diffraction, thermomechanics, dynamometry, polyolefin, crystalline polyolefin, turbidimetry, vitrification

ABSTRACT: Two polymer modifications were obtained by the fractionation (rapid cooling) of benzene solutions of polybutylene originally prepared using $TiCl_4$ + Al (isobutyl)$_3$ as a catalyst. It was shown by optical, x-ray, thermomechanical and dynamometric investigations of these polybutylene fractions that fraction I is a typical crystalline polyolefin with a vitrification temperature of -35C and a melting point of 100C, while fraction II, under the usual conditions of the crystalline state, shows elastomeric properties under the influence of mechanical stress. This phenomenon can be explained by the rapid destruction and re-formation of the crystalline structure. The turbidimetric titration curve for unfractionated polybutylene is also given. This polymer can be looked upon as a reinforced plastic material, in which the elasticity is furnished by fraction II

Card 1/2

ACCESSION NR: AT4020711

and the strength by fraction I. This combination of properties is of great interest for producing highly elastic crystalline plastics. Orig. art. has: 10 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 04Jul62 DATE ACQ: 20Mar64 ENCL: 00

SUB CODE: OC, MT NO REF SOV: 003 OTHER: 001

Card 2/2

IZMAYLOV, N.A.; TSAREVSKAYA, M.N.

Physicochemical analysis in solutions, and calculation of the yield of the reaction. Part 4: Reaction of amines with butyl alcohol, acetone, and acetic acid (from cryoscopic data). Ukr. khim. zhur. 26 no.6:688-696 '60. (MIRA 14:1)

1. Khar'kovskiy gosuniversitet im. A.M. Gor'kogo i Luganskiy sel'skokhozyaystvennyy institut.
(Amines) (Acetone) (Acetic acid)

IZMAYLOV, N.A. [deceased]; TSAREVSKAYA, M.N.

Physicochemical analysis in solutions and calculation of the reaction yield. Part 5. Reactions of acetic acid and its chlorine-substituted derivatives with aromatic amines studied by cryoscopic data. Ukr. khim. zhur. 28 no.1:101-108 '62. (MIRA 16:8)

1. Khar'kovskiy gosudarstvennyy universitet im. A.M. Gor'kogo i Luganskiy sel'skokhozyaystvennyy institut.

IZMAYLOV, N.A.; TSAREVSKAYA, M.N.

Physicochemical analysis in solutions and calculation of the reaction yield. Part 6: Reaction of acetic acid and its chloro-substituted derivatives with aromatic amines (from electric conductivity data). Ukr. khim. zhur. 27 no.4:437-442 '61. (MIRA 14:7)

1. Khar'kovskiy gosudarstvennyy universitet im. A.M.Gor'kogo i Luganskiy sel'skokhozyaystvennyy institut.

(Acetic acid) (Amines)

ALAKIN, A.I.; NIKITIN, B.N.; TSAREVSKAYA, N.P.

Using rare earths for tinting glass. Stek. i ker. 18 no. 3:33-34 Mr '61. (MIRA 14:5)

(Rare earths) (Glass,Colored)

SHAFERSHTEYN, I.Ya.; TSAREVSKAYA, Ye.A.

Complexometric determination of calcium and magnesium. Izv. Otd. est. nauk AN Tadzh. SSR no.1:81-87 '58. (MIRA 12:1)

1.Kafedra khimii Tadzhikskogo sel'skokhozyaystvennogo instituta.
(Calcium--Analysis) (Magnesium--Analysis)

SHAFERSHTEYN, I.Ya.; BONDAR', V.V.; MALAKHOVA, S.I.; KHAMATOVA, A.T.; TSAREVSKAYA, Ye.A.

New method for the determination of nitrates. Dokl. AN Tadzh. SSR 1. no.2:11-15 '58. (MIRA 12:1)

1.Tadzhikskiy sel'skokhozyaystvennyy institut. Predstavlene akademikom AN Tadzhikskoy SSR S.Yusupovoy.
(Soils--Analysis) (Nitrates)

TSARSKI, Petur, inzh.

Forming the water scale and stabilizing cooling water by sodium phosphate in thermoelectric plants. Elektroenergiia 15 no.8: 9-12 Mr '64

S/032/62/028/009/009/009
B104/B102

AUTHORS: Zaytsev, I. F., and Tsarevskiy, A. F.

TITLE: A portable vibration viscometer with numerical reading

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 9, 1962, 1135 - 1137

TEXT: A device for industrial measurements of viscosity is described. It measures the number of vibrations of a light disc in the liquid to be investigated, the disc being attached to the arm of an electromagnetic vibrator. The device consists of two electromagnetic systems and one electronic semiconductor switch. The immersed measuring disc, (1) fixed at the anchor (2) of a vibrator, is set in vibration by the electromagnetic system I (Fig. 1). The frequency of vibration depends on the viscosity. The number of vibrations counted is transferred through the trigger to the electromagnetic system II which works the ratchet mechanism (3) of the numerical indicator. Temperature fluctuations of 2 - 3°C do not affect the accuracy of measurement, but greater fluctuations necessitate corrections. There are 3 figures.

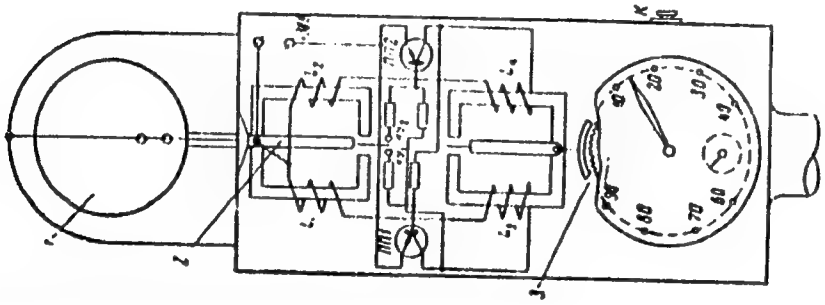
Card 1/2

A portable vibration viscometer...

S/032/62/028/009/009/009
B104/B102

ASSOCIATION: Ukrainskiy proyektno-konstruktorskiy i nauchno-issledovatel'skiy institut po obogashcheniyu i briketirovaniyu ugley (Ukrainian Design and Planning and Scientific Research Institute of Coal Enrichment and Briqueting)

Fig. 1. Schematic diagram of the viscometer.



Card 2/2

TSAREVSKIY, A.F.

VOPROSY EKONOMII ELEKTROENERGII NA UGLEOBOGATITEL'NYKH FABRIKAKH [PROB-LEMS OF ECONOMY OF ELECTRIC POWER IN COAL PROCESSING PLANS, BY] M. SUDENKO I SUDENKO, ALEKSEY MIKHAYLOVICH. MOSKVA, UGLETEKHIZDAT, 1956.

70, [2] P. DIAGRS., TABLES.

"LITERATURA": P. 71

SUDENKO, Aleksey Mikhaylovich; TSAREVSKIY, Anatoliy Fedorovich; SELISHCHEV, A.N., otvetstvennyy redaktor; GAYBER, T.N., redaktor izdatel'stva; ANDREYEV, G.G., tekhnicheskiy redaktor; IL'INSKAYA, G.M., tekhnicheskiy redaktor

[Problems of economizing electric power in coal preparation plants] Voprosy ekonomii elektroenergii na ugleobogatitel'nykh fabrikakh. Moskva, Ugletekhizdat, 1956. 70 p. (MLRA 9:9)
(Coal preparation) (Electric power)

TSAREVSKIY, A.M.; OGORODNIKOV, S.P., inzh.

Using injectors in suction pipes of dredgers. Gidr. i mel. 9 no.10: 50-56 O '57. (MLRA 10:11)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I. Lenina (for TSarevskiy).
(Dredging machinery--Attachments)

TSAREVSKIY, A.M.

Work of the All-Union Scientific Research Institute of Hydraulic Engineering and Reclamation in the field of hydromechanization. Mekh.stroi. 14 no.3:24-25 Mr '57. (MLRA 10:4)

1. Chlen-korrespondent Vsesoyuznoy ordena Lenina akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina.
(Dredging machinery)
(Dams)

TSAREVSKIY, A.

27226 TSAREVSKIY, A. Perspektivy Gidromekhanizatsii Zemlyanykh Rabot Polesskoy Nizmennosti. [Voprosy Osushit. Melioratsii]. V sb: K Voprosu Osvoeniya I Razvitiya Proizvodit. Sil Poles'ya, Minsk, 1949, s.206-13.

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949

ZAYTSEV, I.F.; TSAREVSKIY, A.F.

Portable vibrational viscosimeter with a digital computer reading. Zav. lab. 28 no.9:1135-1137 '62. (MIRA 16:6)

1. Ukrainskiy proyektno-konstruktorskiy i nauchno-issledovatel'skiy institut po obogashcheniyu i briketirovaniyu ugley.
(Viscosimeter)

USSR/Hydrology - Excavators Feb 51

"New Type of Floating Excavating Pump," A. M. Tsarevskiy, B. I. Pugavko

"Gidrotekh i Meliorat" Vol III, No 2, pp 69-79

Min of Water Econ Uzbek SSR constructs series of mech irrigational and soil excavating machines PZU-VNIIG and M-2, expected to be used in constr of hydro-generators in regions of Kuybyshev, Stalingrad, Main Turkmen Canal, Kakhovka on Dnepr, South-Ukraine and North-Crimea canals. Description and diagrams of machines.

[redacted]

176T57

1. TSAREVSKIY, A. M.; PUGAVKO, B. I. Eng.

2. USSR (600)

4. Dredging Machinery

7. Cleaning of irrigation systems by means of hydro-mechanization. Mekh. trud. rab. 6 no.9, 1952

9. Monthly List of Russian Accessions, Library of Congress, _____1953. Unclassified.

TSARGRADSKAYA, N. A., POPOV, V. I., ANTONOVA, M. E., PAVLOVICH, L. A., SAKHAROVA, R. M. and SERGEYEVA, T. Ya.

"About infectious nature of atrophical hog rhinitis."

Veterinariya, Vol. 37, No. 4, 1960, p. 38

Sci. Res. Lab. for Struggle Against Diseases Young Agric. Animals, MSKh, RSFSR

TSAREGRADSKIY, V.A., kand.tekhn.nauk

Selecting diesel lubricating oils and estimating their quality during the operation of diesel locomotives. Trudy TSNII MPS no.180:43-78 '59. (MIRA 13:4)
(Diesel locomotives--Lubrication)

TSAREVSKIY, A. P.

Drainage

Results of scientific work in the field of land reclamation and its introduction into production (Work of the All-Union Scientific Research Institute of Hydraulic Engineering and Reclamation). Dost. sel'khoz. no. 7, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952 UNCLASSIFIED

TSAREVSKIY, A K

Plovuchiye zemlesosnyye ustanovki na meliorativnykh rabotakh
(Floating sand pumps in land reclamation operations, by)
A. K. Tsarevskiy (i dri) Moskva, Sel'khozgiz, 1953.
143 p. Illus., diagrs., tables.

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723.3
.T9

ZAYTSEV, I.F.; DUBROV, N.S. TSAREVSKIY, A.I. ZASIMOVICH, Yu.P.; MAMCHITS, G.I.

Automation of the process for determining the moisture of the charge. Koks i khim. no.8:16-17 '62. (MIRA 17:2)

1. Ukrainskiy proyektno-konstruktorskiy i nauchno-issledovatel'skiy institut po obogashcheniyu i briketirovaniyu ugley (for Zaytsev, Dubrov, TSarevskiy). 2. Kommunarskiy koksokhimicheskiy zavod (for Zasimovich, Mamchits).

TSAREVSKIY, A.M., laureat Stalinskoy premii, kandidat tekhnicheskikh nauk;
MELAMUT, D.L., inzhener.

Filling earth dams in river beds without first cutting off the current with a stone barrier. Gidr.i mel. 5 no.12:30-42 D '53. (MLRA 6:11)
(Dams)

TSAREVSKIY, A.M., kandidat tekhnicheskikh nauk; PUGAVKO, B.I., inzhener

Small-sized MZU dredge. Mekh. trud. rab. 10 no.8:41-42 Ag '56.
(MLRA 9:10)

(Dredging machinery)

TSAREVSKIY, A.M., kandidat tekhnicheskikh nauk; PUGAVKO, B.I., inzhener.

Suction dredge for cleaning ponds. Nauka i zhizn' 20 no.10:38 O '53.
(MLRA 6:10)

(Dredging machinery) (Ponds)

TSAREVSKIY, Aleksey Mikhaylovich, kandidat tekhnicheskikh nauk; ZHILKOV, Leonid Georgiyevich, kandidat tekhnicheskikh nauk; PUGAVKO, Boris Yulianovich, inzhener-konstruktor; MOROZ, I.I., redaktor; ISLENT'YEVA, P.G., tekhnicheskiy redaktor.

[Minor hydraulic engineering equipment; new machines for the dredging of lakes, canals and small rivers] Malaia gidromekhanizatsiia; novye mashiny dlia ochistki prudov, kanalov i malykh rek. Moskva, Izd-vo "Znanie," 1954. 31 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii, Ser. 4, no.23) [Microfilm]
(Dredging machinery) (MLRA 7:11)

MELAMUT, David Lazarevich; KOBYLYAKOV,L.M., redaktor; PEVZNER,V.I., tekhnicheskiy redaktor; TSAREVSKIY,A.M., redaktor; PAVLOVA,M.M., tekhnicheskiy redaktor

[Damming rivers by hydromechanical means] Perekrytie rek sposobom gidromekhanizatsii. Moskva, Gos.izd-vo selkhoz.lit-ry, 1955. 151 p.
(Dams) (MLRA 9:3)

SOV/25-59-1-21/51

AUTHOR: Tsarevskiy, A.M., Director of the Institute

TITLE: The Irrigation of the Golodnaya Step' (Orosheniye Golodnoy stepi)

PERIODICAL: Nauka i zhizn', 1959, Nr 1, pp 35-37 (USSR)

ABSTRACT: The article deals with a new irrigation method for the Golodnaya step', comprising millions of hectars in the 3 Central Asian Republics - Uzbekistan, Kazakhstan and Tadjikistan. The Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii (All-Union Scientific Research Institut of Hydraulic Engineering and Melioration) developed two types of sprinkling machines which have both been tested in the area concerned. The tractor-mounted "DDA-100M" e.g. has the ability of sprinkling 100 liters of water per se-

Card 1/2

cond, and thus irrigates 15-16 hectars in 24 hours. This unit consists of an intake valve and 2 long vanes similar to the wings of an aeroplane. There is 1 photo and 1 drawing.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii (All-Union Scientific Research Institute of Hydraulic Engineering and Melioration)

Pakhta-Aral, p.m.

P2

30(1) SOV/99-59-10-7/11

AUTHOR: Dorozhko, P.K., Engineer

TITLE: Extra-mural Session of the Scientific Council of the VNIIGiM at the "Pakhta-Aral" Sovkhoz

PERIODICAL: Gidrotekhnika i melioratsiya, 1959, Nr 10, pp 58-60 (USSR)

ABSTRACT: The Extra-mural Session of the Uchennyy sovet Vsesoyuznogo nauchno-issledovatel'skogo instituta gidrotekhniki i melioratsii imeni A.N. Kostyakova (Scientific Council of the All-Union Research Institute for Hydraulic Engineering and Melioration imeni A.N.Kostyakov) was held from 15-17 July 1959 at the "Pakhta-Aral" sovkhoz (Kazakh SSR) and was devoted to the introduction and further development of sprinkling and other methods of mechanized watering in cotton-growing districts. The Session was attended by representatives of 76 research, planning, construction and operating organizations connected with the water economy of the Kazakh, Uzbek, Turkmen, Tadzhik, Kirgiz, Azer-

Card 1/7

SOV/99-59-10-7/11

Extra-mural Session of the Scientific Council of the VNIIGiM at the "Pakhta-Aral" Sovkhoz

baydzhan, Georgian, Moldavian and Ukrainian republics, and also by representatives of cotton sovkhozes and kolkhozes in the Golodnaya step' region. The Session heard the following papers: Director of VNIIGiM, Corresponding Member of the VASKhNIL, A.N. Tsarevskiy on "The Introduction of New Irrigation Equipment in Cotton-growing"; the Director of the "Pakhta-Aral" sovkhoz V.N. Kulikov on "The Results and Prospects of Using Sprinkling Equipment on the "Pakhta-Aral" Sovkhoz"; Senior Agronomist of the "Pakhta-Aral" sovkhoz A.V. Paradiyev on "The System of Agromeliorative Measures on the "Pakhta-Aral" Sovkhoz in Irrigating Cotton with Sprinklers"; Candidate of Agricultural Sciences P.S. Pymar' of the VNIIGiM on "The Scientific and Practical Results of Studies of Cotton Sprinkling"; Candidate of Engineering Sciences N.N. Bukov of the VNIIGiM on "The Technical and Economic Indices of Sprinkling Machines"; Candidate of

Card 2/7

Extra-mural Session of the Scientific Council of the VNIIGiM at the "Pakhta-Aral" Sovkhoz

Engineering Sciences N.N. Nechayev of the Uzbekskaya dozhdeval'naya stantsiya (Uzbek Sprinkling Station) on "Experience From the Introduction of Sprinkling in the Uzbek SSR"; Candidate of Agricultural Sciences V.M. Romanov of the VNIIGiM and N.F. Bespalov of the Pakhta-Aral'skaya opytnaya stantsiya (Pakhta-Aral Experimental Station) on "Cotton-watering Routines With Sprinklers"; Candidate of Agricultural Sciences M.V. Preobrazhenskaya of the VNIIGiM on "The Course of the Water-Salt Cycle in Soils With Sprinkling"; Candidate of Agricultural Sciences A.I. Orlov of the VNIIGiM on "The Economic Efficacy of Irrigating Cotton With Sprinklers"; Engineer Kh. G. Ibragimov of the VNIIGiM on "The Experience of Organizing Planned Water Utilization in Sprinkling Cotton Over Large Areas"; Candidate of Engineering Sciences N.A. Grigoryan of the VNIIGiM on "The Experience of Using

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SOV/99-59-9-7/11

Extra-mural Session of the Scientific Council of the VNIIGiM at the "Pakhta-Aral" Sovkhoz

Sprinkling Machines on the "Pakhta-Aral"Sovkhoz"; Candidate of Engineering Sciences N.P. Samsonova of the VNIIGiM on "Leveling Irrigable Areas With Long-Framed Levelers"; Engineer I.I. Velichko of the VNIIGiM on "The Irrigation of Cotton and Other Agricultural Crops With a "atering Installation "ade of Flexible Pipes". In the discussion on points raised in the papers these participa'ed: the Senior Engineer of the "Pakhta-Aral" sovkhoz ".Ya. Tolpado, Senior Hydraulic Technician of the sovkhoz P.N. Yur'yev, Senior Agronomist of the Sovkhoz imeni Kominterna P.V. Kozlov, a mechanic of the section imeni Dzerzhinskiy Terzi, scientific personnel - Sh. Mustafayev of the Azerbaydzhanskaya dozhdeval'naya stantsiya (Azerbaydzhan Sprinkling Station), I.S. Popova of the Pakhta-Aral Experimental Station, P.P. Moskal'tsov of the Tsentral'naya opytno-meliorativnaya stantsiya (Central Experimental Meliorative Station) N.A. Peresypkin

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Extra-mural Session of the Scientific Council of the VNIIGiM at the "Pakhta-Aral" Sovkhoz

and Maslennikov of the Uzbek Sprinkling Station, D.N. Samarkin of the Turkmenskiy nauchno-issledovatel'skiy institut zemledeliya (Turkmen Research Institute for Agriculture), D.M. Kervalishvili of the Georgian NIIGiM, Said-Khodzhayev of the Ak-Kavakskaya opytnaya stantsiya (AK-Kavakskaya Experimental Station), P.M. Lebedev of the VISKhOM, I.D. Panenko of the Moldavskiy institut oroshayemogo zemledeliya (Moldavian Institute for Irrigation Agriculture), N.P. Nemkova of the Yuzhno-Kazakhstanskoye oblsel'khoz-upravleniye (Southern Kazakhstan Oblast Agricultural Board), Engineers N.K. Mozhgil' of the Ukrgiprovodkhoz, V.F. Shilovtsev of the Azgiprovodkhoz, P.I. Denisov of the Gosstroy of the USSR, etc. The Session discussed the promising results from the use of sprinklers and watering installations of flexible pipes in the irrigation of cotton-growing areas, quoting the increased cotton yields from cotton farms where these had been

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Extra-mural Session of the Scientific Council of the VNIIGiM at the "Pakhta-Aral" Sovkhoz

adopted. The DDA-100M sprinkler (designed by the VNIIGiM) had given good service on the "Pakhta-Aral" sovkhoz but the Session criticized the Tashirmash Plant for producing defective and poor-quality sprinklers and other meliorative machinery. To help extend the use of watering equipment on cotton farms intensified research on such equipment is required. The Uzbekskaya akademiya sel'skokhozyaystvennykh nauk (Uzbek Academy of Agricultural Sciences) should encourage and equip the Uzbekskaya dozhdeval'naya stantsiya (Uzbek Sprinkling Station) and organize a chain of supporting centers to introduce watering equipment in the Golodnaya Step' and Khorezm region. A supporting center of the Kazakhskiy institut vodnogo khozyaystva (Kazakh Institute of Water Economy) should be organized at one of the sections of the "Pakhta-Aral" sovkhoz and a Sprinkling Laboratory at the Muganskaya opytno-meliorativnaya stantsiya (Muganskaya Experimental

Extra-mural Session of the Scientific Council of the V"IIGi" at the "Pakhta-Aral" Sovkhoz

Melioration Station) to cover the Azerbaydzhan SSR. The Session felt that the Tashirmash Plant should increase its output of PT-4A leveling machines to cover the needs of the cotton-growing regions, since leveling greatly increases the efficacy of sprinkling. The Session also advises research and practical work for the improvement and wider use of watering installations of flexible pipes.

TSAREVSKIY, A.M., kand.tekhn.nauk; MATKOVSKIY, K.A., inzh.; KHRUSTALEV, M.I., kand.tekhn.nauk

Hydrocyclone, its use and hydraulic calculations. Gidr. i mel. 17 no.4:12-20 Ap '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii imeni A.N.Kostyakova (for TSarevskiy, Matkovskiy). 2. TSentral'nyy nauchno-issledovatel'skiy institut transportnogo

MELAMUT, David Lazarevich, kand. tekhn. nauk; NIKOLAYEV, Vasiliy Mikhaylovich, kand. tekhn. nauk; TSAREVSKIY, A.M., retsenzent; AFANAS'YEV, B.P., red. izd-va; RODIONOVA, V.M., tekhn. red.

[Hydraulic filling of narrow-profile dams and small dams in agricultural construction work] Namyv uzkoprofil'nykh damb i malykh plotin v sel'skom stroitel'stve. Moskva, Gosstroiizdat, 1963. 241 p. (MIRA 16:7)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for TSarevskiy).

(Dams)

TSAREVSKIY, Aleksey Mikhaylovich; YELIZAVETSKAYA, G.V., red.; DEYEVA, V.M., tekhn. red.

[Hydraulic mechanization of land improvement work] Gidromekhanizatsiia meliorativnykh rabot. Izd.2., dop. i ispr. Moskva, Sel'khozizdat, 438 p. (MIRA 16:7)
(Hydraulic engineering)

TSAREVSKIY, A.M.; NIKOLAYEV, V.M., inzh.

Hydraulic-fill construction of dams of a narrow cross section. Gidr. i mel. 13 no.11:28-35 N '61. (MIRA 14:10)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I. Lenina (for TSarevskiy).
(Dams)

TSAREVSKIY, A.M.; PUGAVKO, B.I., inzh.; FOMENKO, V.N., inzh.

Excavating pumps with new working parts. Gidr. i mel. 13 no.2: 51-56 F '61. (MIRA 14:9)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for TSarevskiy).
(Excavating machinery)

TSAREVSKIY, A.M.; MELAMUT, D.L., kand.tekhn.nauk

One-sided hydraulic-fill construction of dams without protective facing of the upstream slope. Gidr. i mel. 12 no.9:23-28 S '60. (MIRA 13:9)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. Lenina (for TSarevskiy).
(Tedzhen Reservoir--Dams)

POPEL', S.I. (Sverdlovsk); SMIRNOV, L.A. (Sverdlovsk); TSAREVSKIY, B.V. (Sverdlovsk); DZHEMILEV, N.K. (Sverdlovsk); PASTUKHOV, A.I. (Sverdlovsk)

Effect of vanadium on the density and surface properties of liquid iron. Izv. AN SSSR. Met. no.1:62-67 Ja-F '65. (MIRA 18:5)

ACC NR: AR6035412 SOURCE CODE: UR/0137/66/000/009/A011/A011

AUTHOR: Popel', S. I.; Sherstobitov, M. A.; Tsarevskiy, B. V.

TITLE: Determination of the speed of penetration of molten oxides in capillary-porous materials

SOURCE: Ref. zh. Metallurgiya, Abs. 9A70

REF. SOURCE: Sb. Poverkhnostn. yavleniya v rasplavakh i voznikayushchikh iz nikh tverd. fazakh. Nal'chik, 1965, 550-557

TOPIC TAGS: porosity, metal surface impregnation, powder metallurgy, refractory oxide

ABSTRACT: The authors determined the rate of impregnation of pressed samples of powders of fused magnesium by iron-silicate melts at 1220 -- 1420°. For the investigated compositions, the height l of the impregnated part grew with time parabolically, like $l^2 = k\tau$, where k is a constant. It is established that k decreases with increasing fraction of SiO_2 in the melt and increases exponentially with increasing temperature. As the grain dimension increases from 0.10 to 0.60 mm, the value of k increases at 1345° from 0.31 to 1.28 cm^2/sec. The influence of the temperature on the rate of impregnation is due to the change in the viscosity and the contact angle. 3 illustrations. Bibliography, 15 titles. D. Kashayeva. [Translation of abstract]

SUB CODE: 20, 11

UDC: 669.046.587:666.764.1

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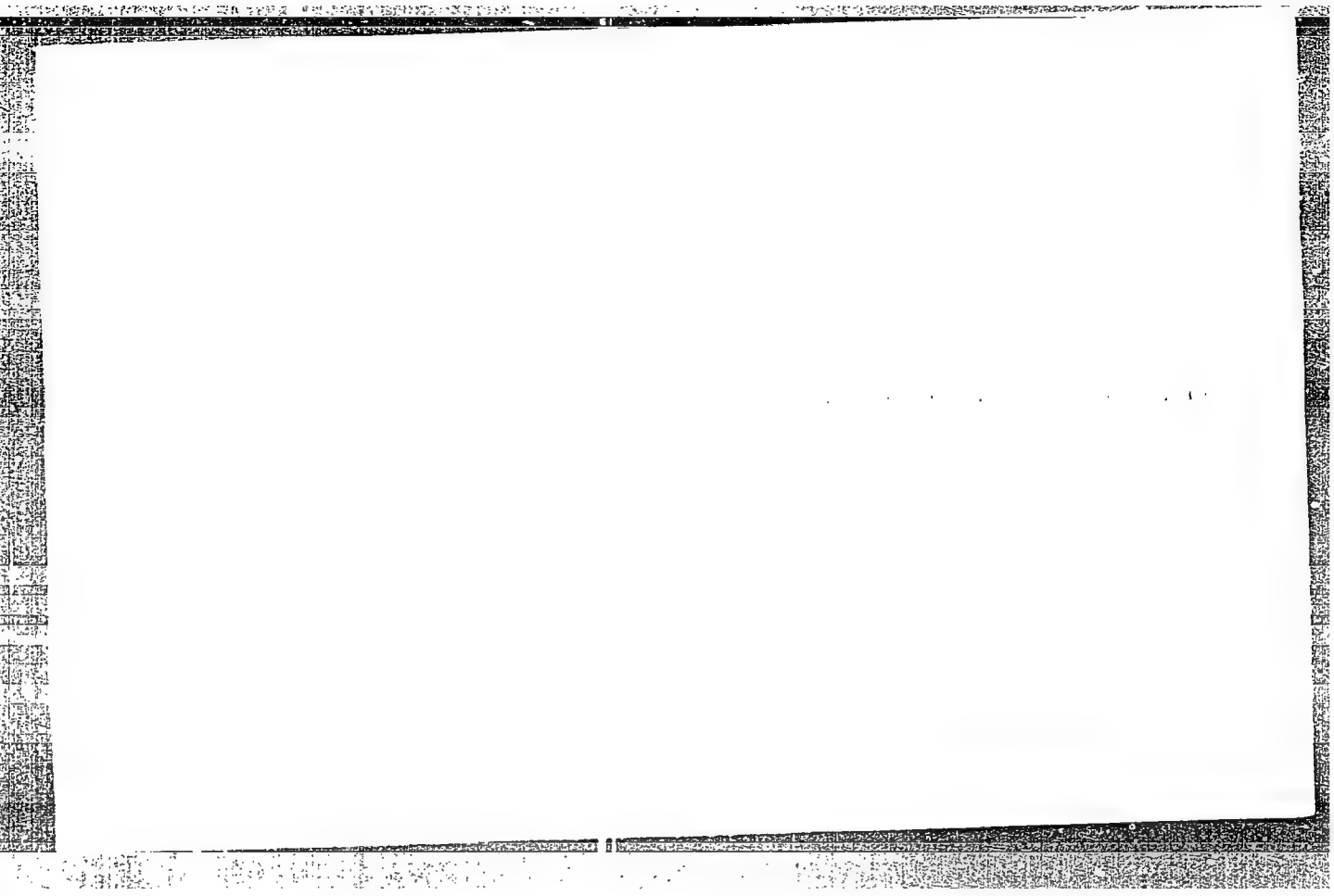

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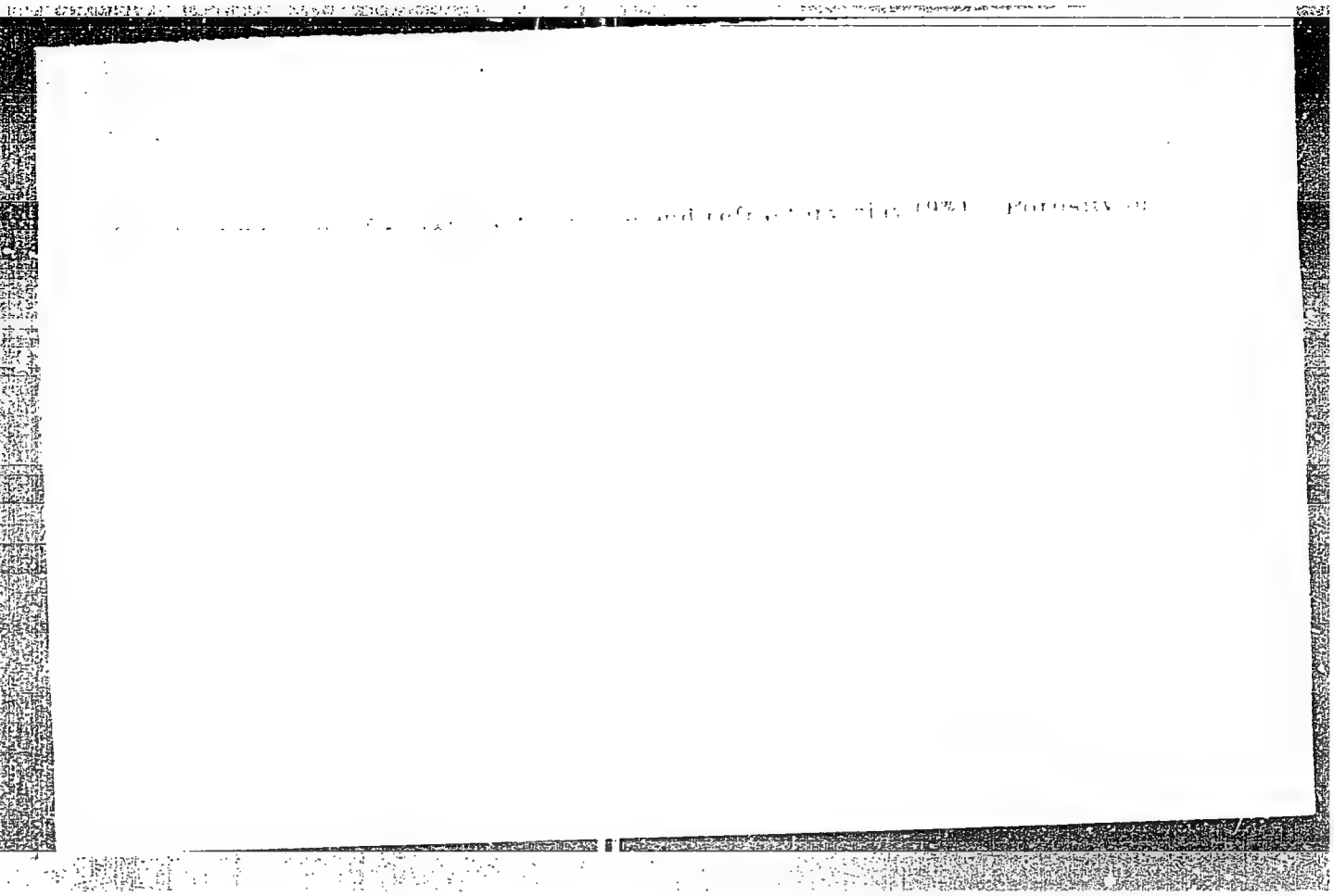


ORLYANSKIY, Ya.G.; TSAREVSKIY, B.V.; POPEL' S.I.

Effect of deoxidizers on the suface finish of carbon steel castings. Lit. proizv. no.10:4-5 O '63. (MIRA 16:12)

POPEL', S.I.; TSAREVSKIY, B.V.; DZHEMILEV, N.K.

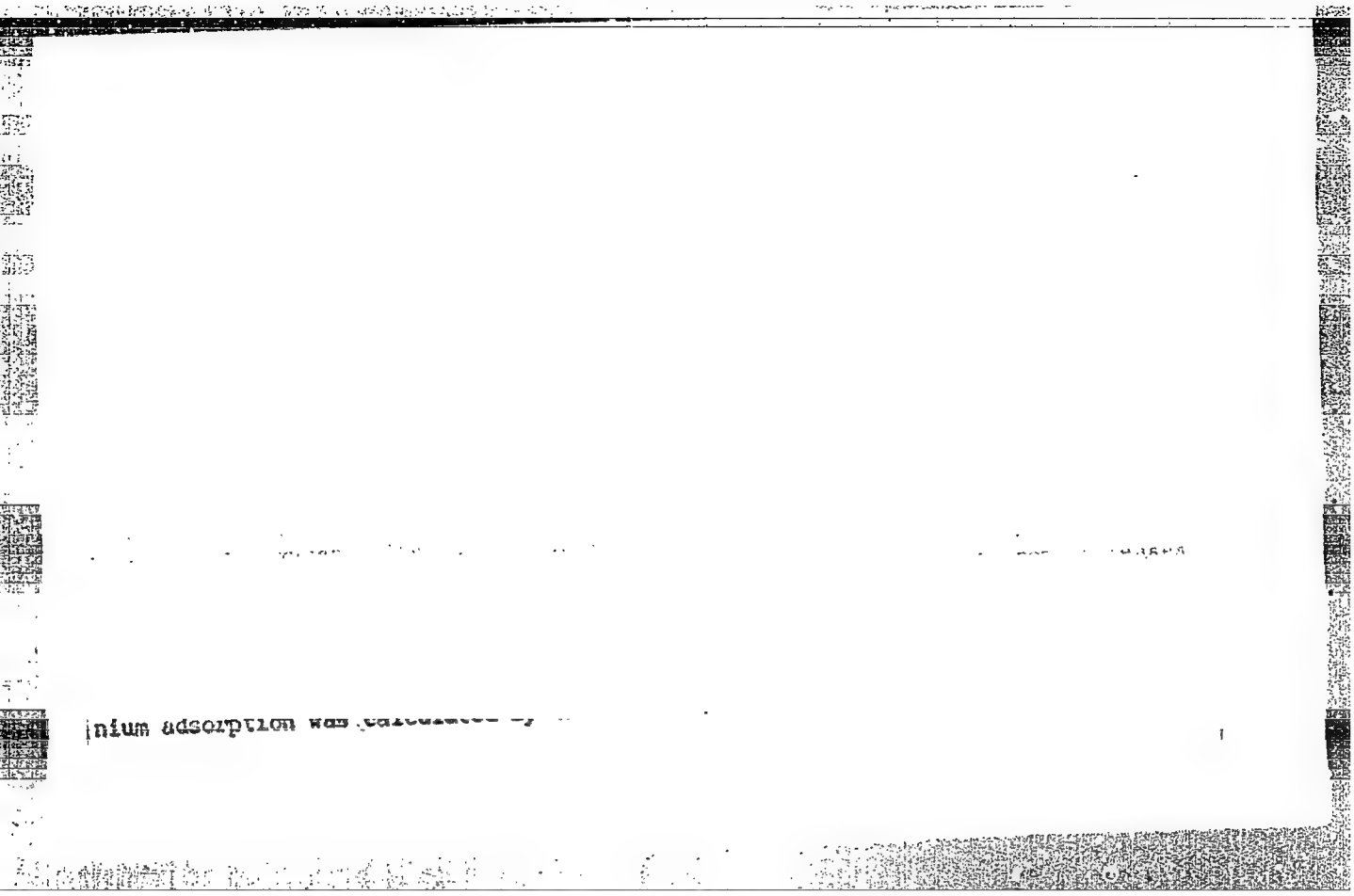
Isotherms of density and surface tension of iron and manganese melts. Fiz. met. i metalloved. 18 no.3:468-470 S '64. (MIR 17:11)

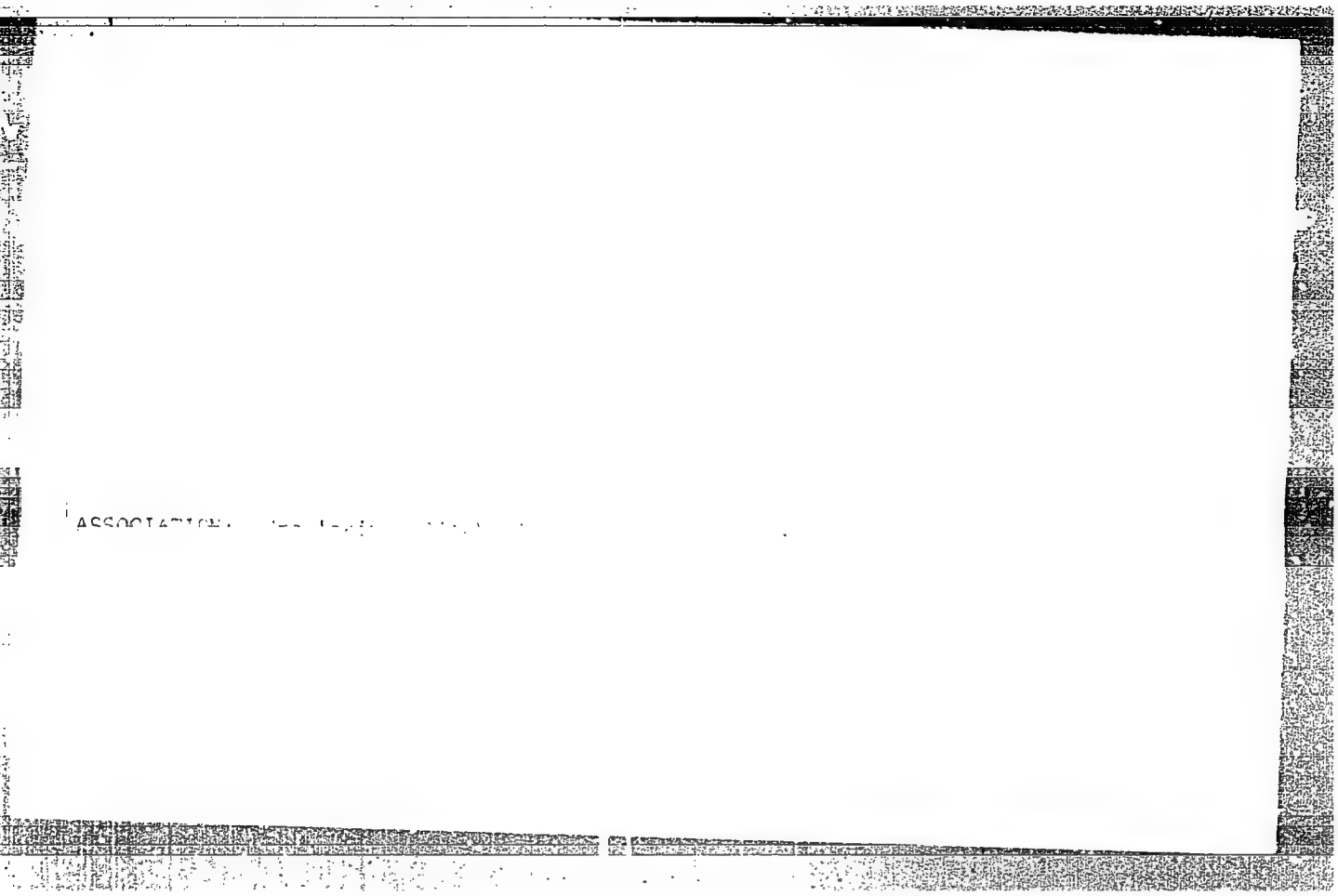
1. Ural'skiy politekhnicheskiy institut imeni Kirova.

SHERSTOBITOV, M.A.; POPEL', S.I.; TSAREVSKIY, B.V.

Methods of determining the rate of penetration of melts into capillary porous materials. Porosh. met. 5 no.8:50-54 Ag '65. (MIRA 18:9)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.





S/180/62/000/006/003/022
E071/E151

AUTHORS: Tsarevskiy, B.V., Popel', S.I., and Lazarev, L.L. (Sverdlovsk)

TITLE: The penetration of iron alloys into packed sand

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.6, 1962, 49-54

TEXT: The pressure (p_k) at which cast iron, steel and Fe-C-Si penetrate into pores between rounded grains of quartz sand of known size distribution was determined. Using the determined values of p_k, σ (surface tension of the alloys) and θ (wetting angle), the effective mean radius of the pores was calculated. The experimental procedure and apparatus used are described in some detail. Sand specimens (20.2 mm diameter, 23 mm in height) were made by compression under a standard load (3.5 kg) of mixtures of washed quartz sand with 4% of bentonite and 5% of water and subsequent drying at 200 °C. The reproducibility of the results was about 10%. The mean radius of pores for a majority of sand fractions tested was found to be 0.31 - 0.41 of the radius of

Card 1/2

The penetration of iron alloys ...

sand grains. With increasing temperature from 1380 °C the penetration pressure of an iron alloy containing 4.6% carbon showed a slight local decrease at about 1615 °C and then followed a sharp increase on approaching 1700 °C. These changes are related to the surface melting of sand grains and their subsequeht sintering. With increasing concentration of carbon and silicon in iron the penetration pressure decreases comparatively uniformly from 338 to 250 mm Hg (at 4.6% C) or to 264 mm Hg (at 3.6% Si). Sulphur causes a more marked decrease in the penetration pressure. Increasing the sulphur concentration from 0.004 to 0.136% causes the value of P_k to decrease from 245 to 107 mm Hg.
There are 4 figures and 3 tables.

SUBMITTED: April 10, 1962

Card 2/2

23617
S/148/60/000/012/002/020
A161/A133

18.8100 1418, 1454, 1045

AUTHORS: Tsarevskiy, B. V., and Popel', S. I.

TITLE: The effect of alloying elements on the surface properties of iron

PERIODICAL: Izvestiya vysshikh uchebnukh zavedeniy. Chernaya metallurgiya, no. 12, 1960, 12 - 16

TEXT: The data existing in literature are contradictory. The purpose of the described investigation was the simultaneous measurement of the surface tension and the angle of contact and an evaluation of the adhesion of iron alloys in liquid state to aluminum oxide by the obtained σ and θ values The test equipment and techniques had been described previously by B. V. Tsarevskiy, S. I. Popel' (Ref. 10: Izv. vyssh. uch. zav. Chern. metallurgiya, 1960, no. 8) in connection with a study of the surface properties of Fe-C alloys. The σ and θ at 1,560°C were determined by the "method of immobile drop", in argon. Carbonyl iron purified from C and O was used for solvent; alloys were prepared with high-purity Si and electrolytic Ni, Mn and Cr, the latter in the form of preliminarily prepared alloy with 26.7%

Card 1/6

The effect of alloying elements on the...

Cr. The alloying elements were held in hot dried hydrogen and subsequently degassed in the vacuum at 800°C. The backings were made of Al_2O_3. The density values of iron and the most part of alloys were determined using the handbook of G. Mellor (Ref. 11: Comprehensive Treatise of Inorganic and Theoretical Chemistry, 14, 2. 1934) and extrapolation; the density of nickel by data of P. Kozakevitch, G. Urbain (Ref. 5: Journal of Iron and Steel Inst., 186, 2, 167, 1957); the surface tension by the graphs in the work of S. I. Popel', N. N. Krasnovskiy, O. A. Yesin, Yu. P Nikitin (Ref. 12: Trudy Ural'skogo politekhnicheskogo institu'a, sb. 49, 76, Metallurgizdat, 1954). The determination error of σ was 5%, and of θ ±3°. The results are given in a table and 3 graphs (Fig. 1, 2 and 3). Increase of Si content to 5.1% (weight) in iron caused σ decrease to 1,615 erg/cm^2; Mn reduced the surface tension even more, and σ in alloy with 12.2% Mn was only 1,365 erg/cm^2; Ni increases the surface tension, to 1,790 erg/cm^2 at 19.8% content; pure nickel had σ = 1,810 erg/cm^2. The ratio of σ to the Ni-content was expressed by a straight line (Fig. 2, curve 1); Cr content to 27% reduced σ to 1,600 erg/cm^2 (Fig. 2, curve 2). The much higher effect of Ni and Cr on σ may be due to the content of capillary-active impurities in other in-

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The effect of alloying elements on the . .

vestigations, particularly of S. Oxygen which proved to have the highest effect - 0.076% O caused a drop in Fe-O to 1,235 erg/cm^2 (Fig. 3), and these results are close to already available data. It was evident that an addition of Si, Ni, Cr and C changed the bond forces insignificantly - at 10% (at) Si or 12% (at) Cr the cohesion dropped 5%, and at 12% (at) Mn the drop exceeded 20%. It is not excluded that the effect of Mn will be lower in complete absence of oxygen and sulfur. The higher cohesion of melts containing Mn or O with oxide surfaces obviously makes the liberation of solid inclusions from metal into slag more difficult. It seems to be one of the reasons for the sticking of manganese steel and oxidated low-carbon steel to refractories. Conclusions: The adhesion of iron alloys to solid aluminum oxide is not high in systems Fe-Si, Fe-Ni, and Fe-Cr, and amounts to 7 - 20% of the iron cohesion. It raises with raising Si and Ni content and drops when Cr is added. Addition of Mn and oxygen into iron increases the adhesion, and at 12% Mn or 0.076% O it equals 1,065 and 1,235 erg/cm^2, respectively. There is 1 table, 3 figures and 14 references: 9 Soviet-bloc and 5 non-Soviet-bloc. The four references to English-language publications read as follows: P. Kozakevich, G. Urbain. J. of Iron and Steel Inst., 186, 2, 167, 1957; F. A. Halden, W. D. Kingery. J. of Physical Chemistry, 59,

Card 3/6

The effect of alloying elements on the...

577, 1955; G. Mellor (mentioned in text), 1934; Kengery. J. Amer Ceramic Soc. 37, 2, 42, 1954.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute)

SUBMITTED: April 28, 1960

[illegible], P. V. and [illegible], V. A.

"A Thermodynamic Analysis of Gaseous Reactions in the Casting Mold"

report presented at the 7th Conference of the International Committee of Foundry Technical and the Casting, sponsored by the Inst. of Mechanical Engineering, Lond. et. USSR, 25-28 January 1961.

[illegible], V. V., [illegible], L. [illegible], and [illegible], V. A.

"An Investigation of the Physical-Thermal Interaction of Alloys with Molding Materials"

report presented at the 7th Conference on the Interaction of the Metal with the Casting, sponsored by the Inst. of Mechanical Engineering, Acad. Sci. [illegible], 25-28 January 1961.

CHERNOGOROV, Pavel Vasil'yevich; VASIN, Yuriy Petrovich; LUZIN, P.G., inzh., retsenzent; TSAREVSKIY, B.V., inzh., retsenzent; SIDORENKO, R.A., kand. tekhn. nauk, red.; DUGINA, M.A., tekhn. red.

[Making castings with a smooth surface] Poluchenie otlivok s chistoi poverkhnost'iu. Moskva, Gos. izd-vo mashinostroit. lit-ry, 1961. 143 p. (MIRA 14:7)

(Founding)

TSAREVSKIY, B.V.; POPELY, S.I.

Liquid Fe and Ferm alloys to solid oxides.

report submitted for the 5th Physical Chemical Conference on Steel Production.

MOSCOW — 30 JUN 1959

TSAREVSKIY, B.V.; POPEL', S.I.

Surface properties of iron-carbon alloys. Izv. vys. ucheb. zav.; chern. met. no.8:15-21 '60. (MIRA 13:9)

1. Ural'skiy politekhnicheskiy institut.
(Iron alloys) (Surface tension)

S/148/60/000/008/013/018/XX
A161/A029

AUTHORS: Tsarevskiy, B.V.; Popel', S.I.

TITLE: Surface Properties of Iron-Carbon Alloys

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. - Chernaya metallurgiya, 1960, No. 8, pp. 15 - 21

TEXT: The existing data on the surface tension of iron-carbon alloys being different and contradictory (Refs. 1,2,7), the described investigation has been carried out to obtain more accurate data on the effect of carbon on surface tension of iron and to determine the wettability of aluminum oxide and molten magnesia by iron-carbon alloys. The value of surface tension and contact angles was used as a criterion of adhesion in the liquid and solid phase. The "immobile drop method" was employed for simultaneous determination of surface tension and contact angles. The experimental installation is briefly described and shown in a diagram (Fig. 2). Fe-C alloy was placed into a corundum tube ("3") and with it into the carbon tube of the installation into a corundum tube ("3") and with it into the carbon tube ("2") inserted furnace, with a slight incline; the tube with the sample was rinsed with pure argon before switching on the furnace and brought into horizontal position when the sample became brightly luminescent at 1,100 - 1,200°C to make the drop (Figs.

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2, "4") symmetrical and prevent flowing. The drop was heated to 1,560°C, held for 12 - 15 min and photographed on supercontrast diapositive plates. The following facts have been observed. 1) With a C content increase to 4.1% at 1,560°C and 0.004% S, the effect of C on the surface tension of iron drops from 1,710 to 1,620 erg/cm^2; saturation of the surface layer with C is not reached at a 3% C content. 2) Addition of C produces a more intensive drop of the surface tension in alloys containing 0.026 - 0.03% S. This is caused by additional adsorption of sulfur, the activity of which grows with growing carbon content. 3) With the carbon content in pure carbonyl iron raised to 4.1%, the contact angles on a lining of aluminum oxide are reduced from 141 to 132°. 4) With the carbon content in pure iron raised to 4.1%, its adhesion to aluminum oxide increases from 380 to 540 erg/cm^2. The adhesion of commercial iron to molten magnesia is of 660 erg/cm^2; at 3.15% C it increases to 890 erg/cm^2. There are 4 figures, 2 tables and 13 references: 10 Soviet, 2 English and 1 French.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

SUBMITTED: March 7, 1960

Surface Properties of Iron-Carbon Alloys

S/148/60/000/008/013/018/XX
A161/A029

Figure 2:

Diagram of the Installation for Determining the Surface Tension and the Contact Angles.

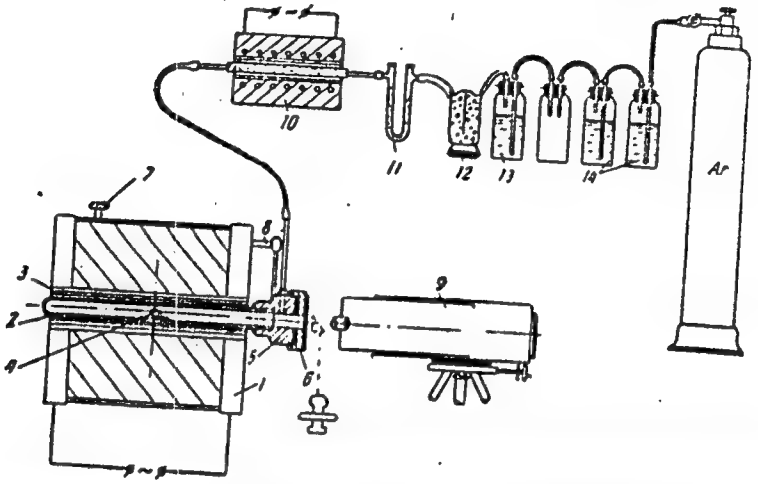

fig. 2.

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18.1250

S/126/60/010/006/012/022
E193/E483

AUTHORS: Sidorenko, R.A. and ~~Tsarevskiy, B.V.~~

TITLE: The Effect of Sulphur on the Surface Properties and Structure of the Nickel-Carbon Alloys

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No 6 pp.866-872

TEXT: The object of the present investigation was to study the relationship between the surface properties of alloys formed with carbon by the elements of the iron sub-group and the form in which graphite is precipitated in these alloys. To this end, the effect of sulphur on the surface tension of nickel-carbon alloys and on the contact angle subtended by these alloys on solid graphite, was determined; these data having been correlated with the structure of the alloys with particular reference to the form of precipitated graphite. The starting nickel-carbon alloys contained 2.4% C, 0.002% S, 0.0004% O and 3.35 $cm^3/100$ g H. The sulphur content was increased by addition of a master alloy containing 0.8% C and 1.43% S. The measurements of the surface tension and contact angle were carried out at 1360°C on polished graphite plates. The following conclusions were reached.

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S/126/60/010/006/012/022
E193/E483

The Effect of Sulphur on the Surface Properties and Structure of the Nickel-Carbon Alloys

(1) Sulphur present in the alloys studied displays high surface-active properties and causes a considerable reduction in the interfacial tension at the alloy-gas and alloy-graphite interfaces. A noticeable decrease in the contact angle begins when the sulphur content exceeds 0.07%. (2) With increasing sulphur content in the alloy, the quantity of sulphur adsorbed on the graphite surface increases, reaching the saturation point at the sulphur content of 0.06%. The distribution of the sulphur ions in the adsorbed layer is similar to the configuration of these ions in the (110) plane of Ni_3S_2. (3) Sulphur affects directly the form in which graphite is precipitated in nickel-carbon alloys, inhibiting the formation of spheroidal graphite and promoting the precipitation of lamellar graphite. (4) In contrast to the Fe-C alloys, in which increasing the sulphur content above a fraction of a percent leads to refining of the lamellar graphite, increasing the sulphur content in the Ni-C alloys brings about an increase in the size of the graphite lamellae. (5) The effect of sulphur on the structure

S/126/60/010/006/012/022
E193/E483

The Effect of Sulphur on the Surface Properties and Structure of the Nickel-Carbon Alloys

of the alloys studied is associated with its surface-active characteristics and can be explained on the basis of a hypothesis according to which sulphur is preferentially adsorbed on the (0001) planes of the graphite nuclei. Acknowledgments are made to Docent S.I.Popel for valuable advice. There are 4 figures. 2 tables and 22 references: 12 Soviet and 10 non-Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut imeni S.M.Kirova (Ural Polytechnical Institute imeni S.M.Kirov)

SUBMITTED: April 25, 1960

Card 3/3

TSAREVSKIY, B.V.; POPEL', S.I.

Steel adhesion to various refractory materials. Izv. vys. uchab. zav.; chern. met. 6 no.12:9-13 '63. (MIRA 17:1)

1. Ural'skiy politekhnicheskiy institut.

CHECHULIN, V.A.; TSAREVSKIY, B.V.

Gas reactions in the foundry mold. Lit.proizv. no.7:38-41 Jl '61. (MIRA 14:7)

(Molding (Founding)) (Gases in metals)

S/137/62/000/004/004/201
A006/A101

AUTHORS: Tsarevskiy, B. V., Popel', S. I.

TITLE: Adhesion of liquid iron and ferroalloys to solid oxides

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 8, abstract 4A37 (V sb. "Fiz-khim. osnovy proiz-va stali", Moscow, AN SSSR, 1961, 97 - 105)

TEXT: The authors determined simultaneously surface tension of melts σ and of contact angles θ; from these values adhesion was determined. σ and θ were determined by taking photographs of a lying drop in purified argon atmosphere. Either corundize backings (pressed at a pressure of 600 kg/cm^2 from chemically pure Al_2O_3 powder, roasted at 1,600°C and polished) or magnesite backings, made of compact melted magnesium lumps, were used. The initial metals were purified carbonyl or technically pure Fe, Si of 99.95% purity and electrolytic Mn. σ of Fe containing (in %) C 0.037 - 0.07, S 0.004, O 0.0042, P 0.006, Cr 0.01, traces of Si, Mn and Ni, was 1,710 erg/cm^2; θ on a Al_2O_3 plate was 141°, and adhesion was 380 erg/cm^2. The weak effect of C and Si on σ_{Fe} and θ was established. With a

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concentration of C reaised up to 4.1% and Si to 5.1%, the magnitude of σ decreases to 1,625 erg/cm^2, θ decreases by 8° - 15°, and adhesion increases to 517 erg/cm^2. The authors confirmed high capillary activity of O in Fe on the boundary with gas and solid Al oxide. Adhesion of Fe-C and Fe-Si alloys to solid oxides is small. It is 12 - 20% of the metal cohesion, smoothly decreasing with a higher C and Si content. The introduction of O in Fe increases adhesion very strongly. At 0.076% O concentration, adhesion attains 1,235 erg/cm^2. The authors confirm a greater reduction of σ from the introduction of C and Si in Fe of technical purity, which is presumably explained by high S concentration whose activity increases from C and Si addition. Adhesion of commercial alloys to oxides is higher than that of pure Fe.

T. Kolesnikova

[Abstracter's note: Complete translation]

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B166/B101

AUTHORS: Tsarevskiy, B. V., Popel', S. I.

TITLE: The adhesion of liquid iron and ferroalloys to solid oxides

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1962, 72, abstract 8B516 (Sb. "Fiz.-khim. osnovy proiz-va stali". M., AN SSSR, 1961, 97-105)

TEXT: The surface tension σ and the contact angles θ of iron alloyed with O_2, C and Si on oxide backings were determined simultaneously. The results obtained are used to calculate the adhesion of liquid iron to solid oxides. The σ of the iron studied amounts to 1710 ergs/cm^2, the θ on a plate made from Al_2O_3 are 141°, and the adhesion is 360 ergs/cm^2. It is established that C and Si have a slight influence on σ and θ. Increasing the concentration of C to 4.1 % and Si to 5.1 % reduces the magnitude of σ to 1625 ergs/cm^2 and θ decrease by 8-15°. High capillary activity of O_2 in iron on its interface with a gas and with solid aluminum oxide is

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The adhesion of liquid iron...

confirmed. It is established that the adhesion of iron-carbon and iron-silicon alloys to solid oxides is small, amounting to 12-20 % of the cohesion of the metal and decreasing smoothly with increase in the C and Si content. The introduction of O_2 into iron gives an extremely sharp increase in adhesion. With a concentration of 0.076 % O_2 the adhesion reaches 1235 ergs/cm^2. It is confirmed that a more intense reduction in σ results from the introduction of C and Si into commercially pure iron. This intensification is apparently brought about by the high concentration of sulfur, whose activity is increased by the introduction of C and Si. The adhesion of the commercial alloys to oxides is higher than that of pure iron. [Abstracter's note: Complete translation.]

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